

EBRD Sustainable Energy in Turkey

Financing Clean Technologies for Sustainable Development



Adonai Herrera-Martínez
Energy Efficiency and Climate Change, Istanbul RO
European Bank for Reconstruction and Development
martinea@ebrd.com

Outline

- **EBRD: Mission & Operations**
- **The Bank's Approach to Climate Change: The Sustainable Energy Initiative**
- **The Sustainable Energy Action Plan**
- **EBRD's Financial Products in Turkey to Promote Clean Technologies**
- **Contribution to Development of Carbon Markets**



The European Bank for Reconstruction and Development: Regional Leader in its Countries of Operations

Where we operate

As of January 2010

Founded in 1991 after the disintegration of the Soviet Union, EBRD's region of operations cover most countries in Eastern Europe, Central Asia and, since 2008, Turkey



Central Europe and the Baltic states	South-eastern Europe	Eastern Europe and the Caucasus	Russia	Central Asia	Turkey
01 Croatia	10 Albania	17 Armenia	23	24 Kazakhstan	30
02 Czech Republic*	11 Bosnia and Herzegovina	18 Azerbaijan		25 Kyrgyz Republic	
03 Estonia	12 Bulgaria	19 Belarus		26 Mongolia	
04 Hungary	13 FYR Macedonia	20 Georgia		27 Tajikistan	
05 Latvia	14 Romania	21 Moldova		28 Turkmenistan	
06 Lithuania	15 Montenegro	22 Ukraine		29 Uzbekistan	
07 Poland	16 Serbia				
08 Slovak Republic					
09 Slovenia					

*as of the end of 2007, the EBRD no longer makes investments in the Czech Republic.



The European Bank for Reconstruction and Development: Mission and Vision

Since its inception in 1991, EBRD's operations are based on three principles:

Promoting transition to market economies, private ownership and good governance

Investing in financially viable projects, together with the private sector

Providing financing at reasonable terms, otherwise not available from private sources

**Transition
Impact**



**Sound
Banking**

**Addition-
ality**

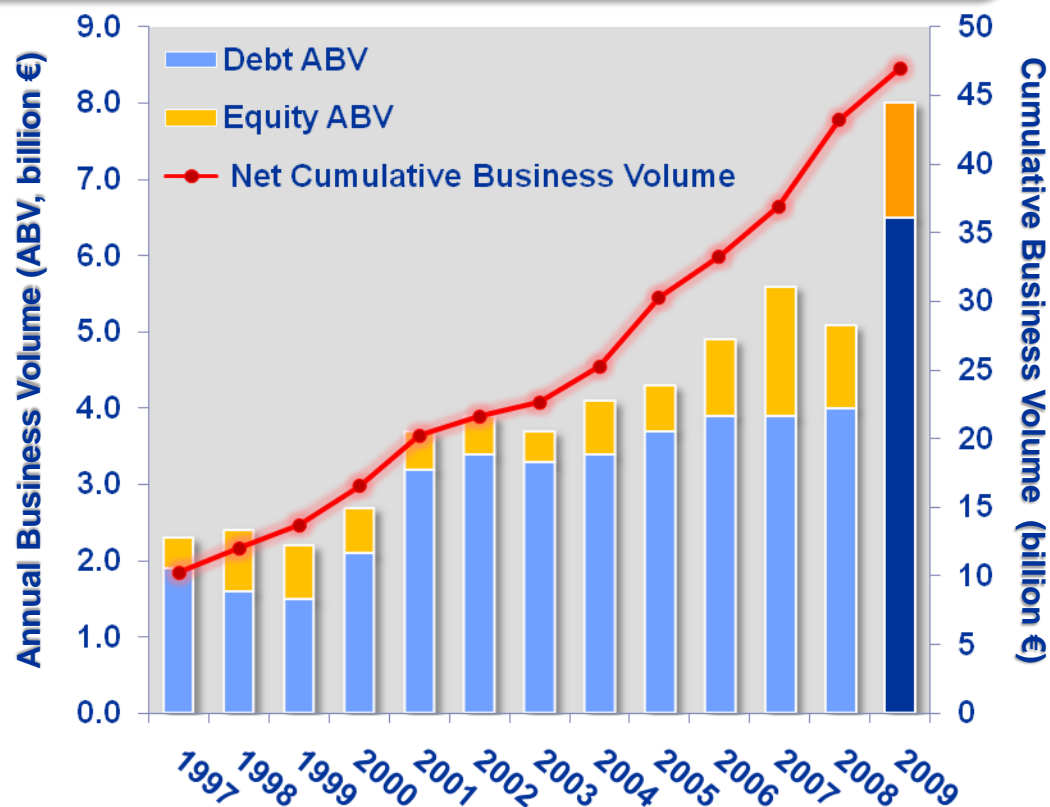
Focusing on the **triple-bottom line** benefits:
Economic, Social and
Environmental



The European Bank for Reconstruction and Development: Investments in the Times of Crisis

Catalyst for Commercial Investment: Every € 1 invested or lent by the EBRD mobilises more than € 3 from other sources

- Since 1991, has invested more than **€ 50 billion** in **3,000 projects**
- **Private sector** > 80% of portfolio
- **Debt 80%, Equity 20%** of portfolio
- **€ 9 billion** invested in 2010
- € 622 mln in 2010 in **Turkey**, expanding to **€ 1.2 billion in 2011**



The Sustainable Energy Initiative



EBRD's Sustainable Energy Initiative (SEI): Expanding Investments in Energy for Low-Carbon Sustainable Growth

Launched in 2006 in response to the **energy transition needs** of EBRD's area of operations. Its **achievements up to Q3 2011** were:

- EBRD's sustainable energy investments to **€8.1 Billion**, for total project value of **€44.1 billion in 431 projects in 29 countries**;
- Annual savings of **45.8 million tonnes CO₂-eq p.a.** (~17% of Turkey's emissions) and **15.1 million tonnes of oil eq. p.a.** (~21% of Turkey's energy net imports)

SEI 6 areas of investment are:



1. Industrial
Energy
Efficiency



2. Sustainable
Energy
Financing
Facilities



3. Power
Sector
Energy
Efficiency



4. Renewable
Energy Scale-
up



5. Municipal
Infrastructure
Energy Efficiency



6. Carbon
Markets
Development



EBRD Sustainable Energy Operational Approach: A Successful Holistic Strategy

Via these three parallel activities **SEI accounts for 21% of EBRD's ABV; In Turkey in 2011 to-date it is 54% of the ABV**

Technical Assistance

Policy Dialogue

Working with governments to support development of **strong institutional and regulatory frameworks** that incentivise sustainable energy



Projects & Investments

Technical assistance to overcome barriers: market analysis, energy audits, training, awareness raising; grant co-financing to provide appropriate incentives and address affordability constraints

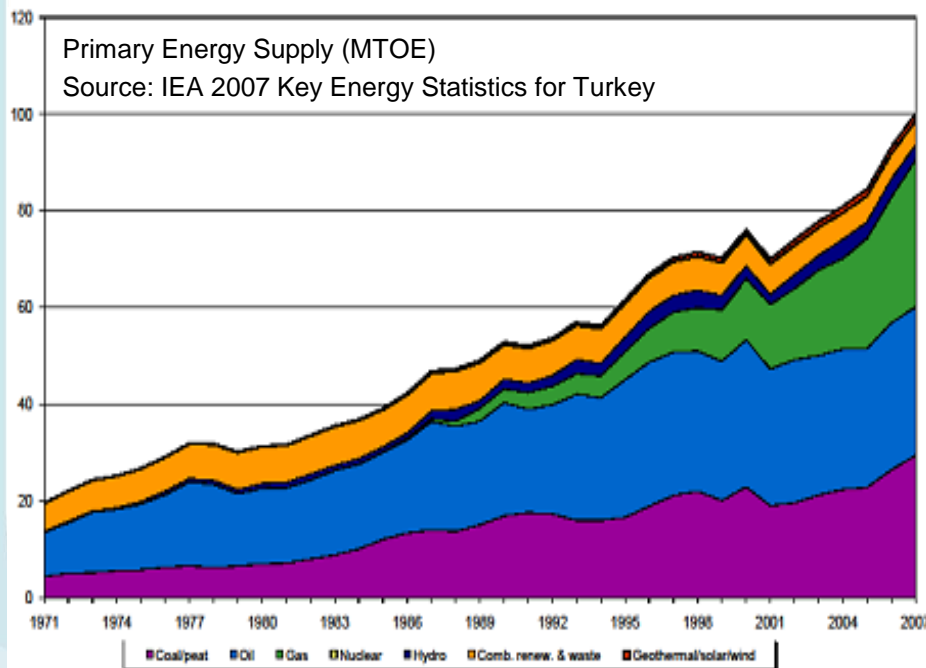
Projects with numerous clients, public and **private, with a range of financing instruments**



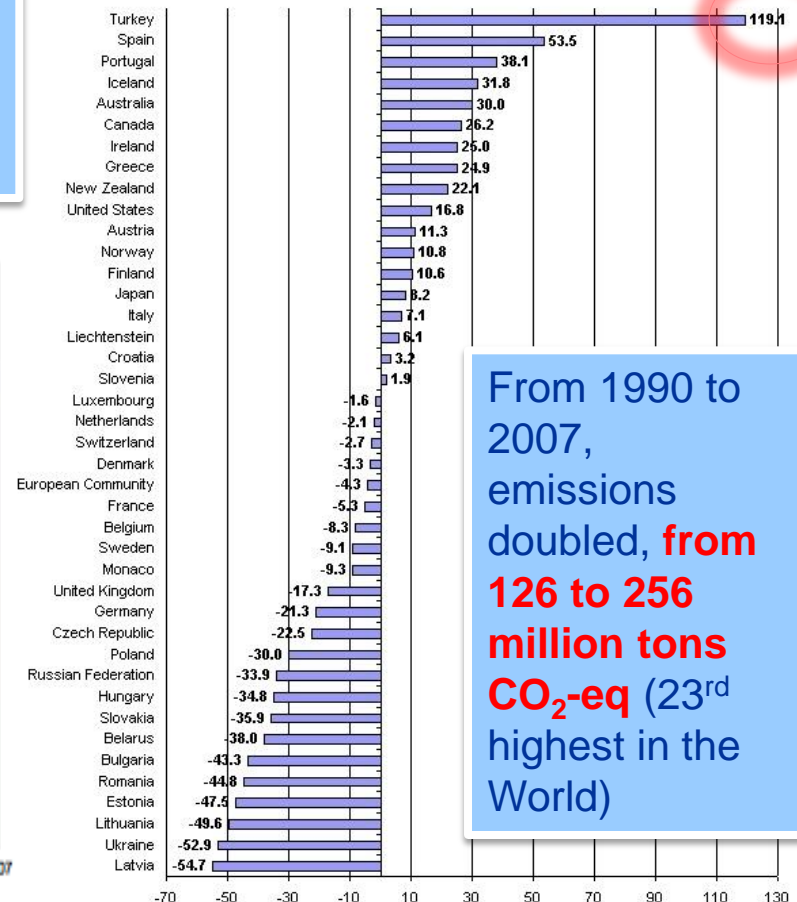


Turkey's Energy Consumption and GHG Emission: Recognising Opportunities for Clean and Sustainable Development

Fivefold energy consumption increase in 35 years, predominantly from **fossil fuels**; marginal renewable energy contribution (approx. 9% of total, despite vast resources)



Changes in GHG emissions excluding LULUCF (%)

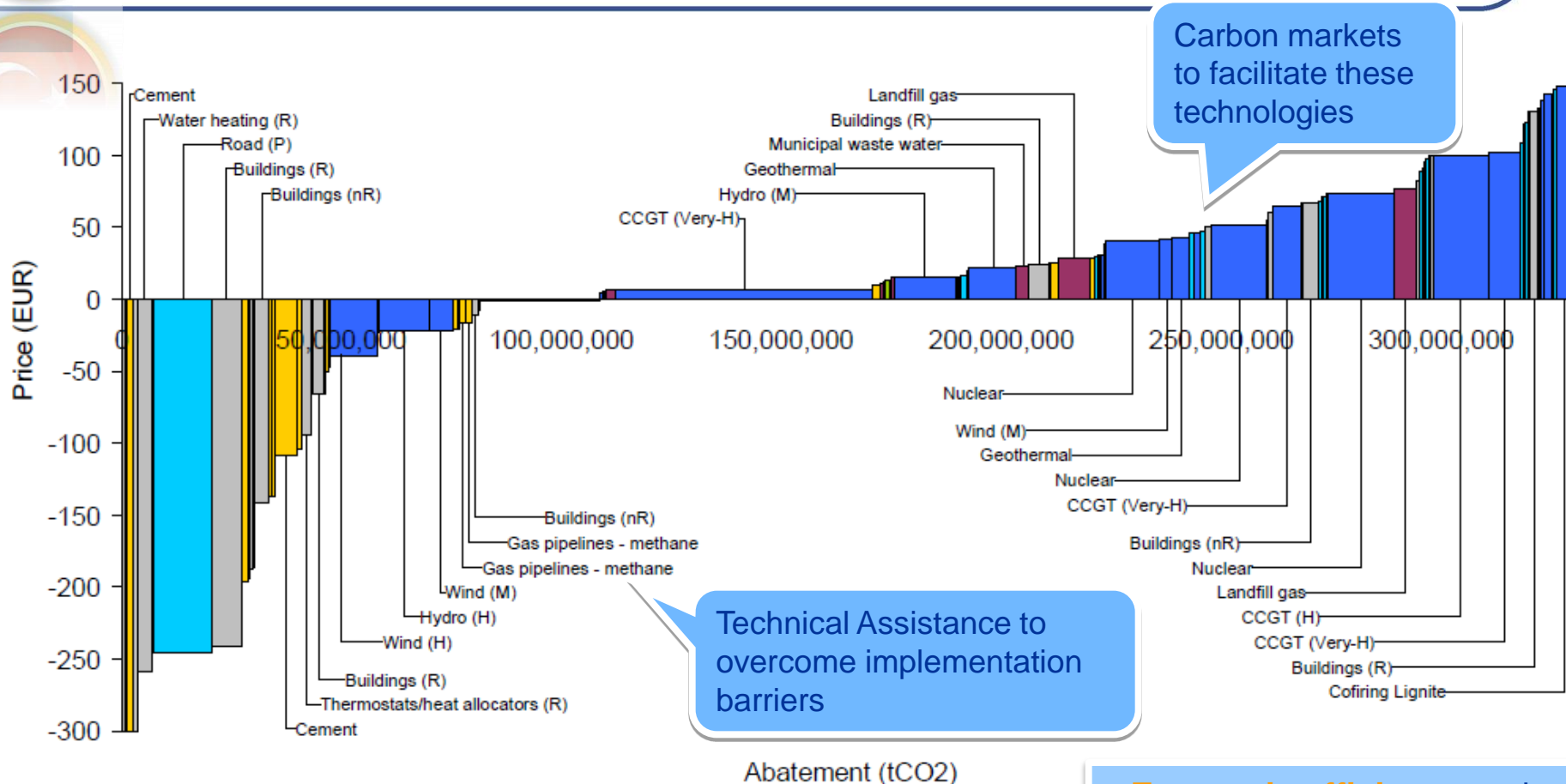


From 1990 to 2007, emissions doubled, **from 126 to 256 million tons CO₂-eq** (23rd highest in the World)





The Carbon Abatement Curves: Cost-Efficient Technologies for Greenhouse Gas Emission Reduction



Notes: Categories of Power generation are labelled L (Low), M (Medium), H (High) and Very-H (Very-high). (Passenger) and F (Freight). Buildings are R (Residential) or nR (non-Residential)

• **Economic efficiency** and capital expenditure are two major criteria for technology choice



The Sustainable Energy Action Plan



Sustainable Energy Action Plan (SEAP):

An Integrated Approach towards Sustainable Development



Rationale

- Provides a roadmap for institutional cooperation
- Mainstreams sustainable energy
- Creates a framework for investments in the country

Institutional Roles

- **Government of Turkey:** identify priority areas for investment
- **EBRD:** close cooperation with Turkish institutions + focus investments in strategic areas

Value Proposition

- Scale-up investments in sustainable energy
- Mobilise additional Technical Assistance funds
- Advise on policy development to promote sustainable growth

Sustainable Energy Action Plan (SEAP):

An Integrated Approach towards Sustainable Development



POWER & ENERGY



- Support on privatisation
- Definition of different tariff methodologies
- Modernisation and development of transmission lines (including Nabucco)
- Scale-up and diversify renewable energy investments
- Strategic environmental assessment for RE

AGRICULTURE & INDUSTRY



- Raising awareness among SMEs on the opportunities for Energy Efficiency
- Support Turkish industry to implement state-of-the-art EE technologies
- Provide Energy Audits to further unlock EE potential
- Tap onto the vast biogas and biomass resources, particularly in the agricultural sector

MUNICIPAL INFRASTRUCT.



- Develop a SEFF strategy to access residential and municipal clients
- Launch donor supported activities to develop the sustainable cities concept
- Focus investments in the waste management and waste-to-energy sector
- Develop the ESCO concept

CLIMATE FINANCE



- Support clients and partner banks in accessing carbon finance
- Develop the carbon markets by facilitating transactions
- Support the Government in developing a registration system
- Mainstream carbon finance in all EBRD SEI operations

Sustainable Energy Action Plan (SEAP): An Integrated Approach towards Sustainable Development

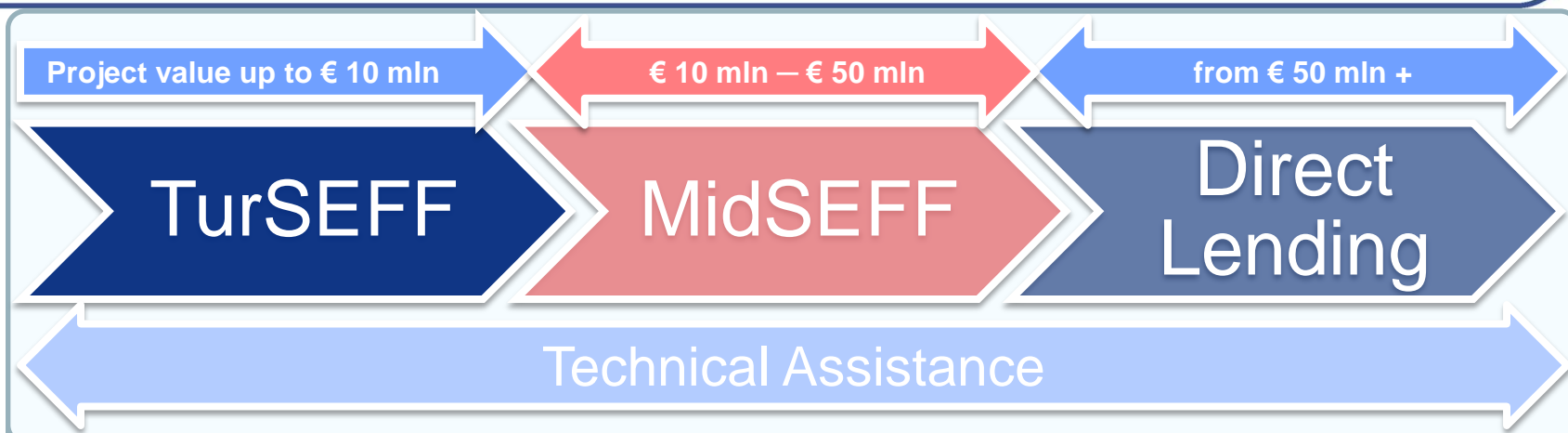


Topic discussed	Description	Suggested timeline to start engagement	Ministries/ Institutions	Action
Energy Efficiency				
ESCO Market Potential	Preparatory work to assess the public and private sector ESCO Market Potential	July 2011	EIE, Ministry of Environment and Urbanization (MoEU)	Launched
Renewable Energy				
Waste to Energy Development	Develop model frameworks and financing approaches for waste to energy installations; review market potential	July 2011	MoENR, MoEU, Ministry of Development (MoD)	Launched
Renewable Energy Action Plan (REAP)	Develop a REAP along the lines of the EU REAPs.	November 2011 onwards	MoENR, MoEU	
Technology				
Smart Metering Development	Study the potential and develop the regulatory framework for smart metering	July 2011	EMRA, MoENR, EIE	Launched
Climate Change				
National Appropriate Mitigation Actions (NAMA)	Develop sectoral NAMA plans and portfolio of potential projects for Turkey	November 2011 onwards	MoEU, MoENR	

EBRD's Financial Products in Turkey



The European Bank for Reconstruction and Development: Modus Operandi



- **Financing Facilities** through partner financial institutions – individual clients, small size projects and SMEs; up to € 5 million loans (€ 20 million project value)
- **Direct Lending Facilities** – limited recourse, mid-sized projects, flexible approval procedure; up to € 15 million investments (€ 50 million project value)
- **Direct Investment** – loans and equity investment; investments above € 15 million for overall project value of € 50 million+
- **Technical Assistance** (e.g. energy audits, financial advisory services) – applicable to any sector and project size

The Sustainable Energy Initiative:

Leading EBRD's Path towards Transition Impact in Turkey

- EBRD's ABV in Turkey: **€ 622 mln** (2010) and **€ 652 bln** (2011- to date)
- SEI's contribution: € 269 mln (2010, **43%** of the ABV) and € 349 mln (2011- to date, **54%** of the ABV)
- **Small** SE investments: TurSEFF – € 175 mln via 5 Partner Banks (PBs)
- **Mid-Size** SE investments: MidSEFF – € 700 mln via 7 PBs
- **Corporate** SE investments: 6 Energy Audits: Ceramic, Cement, Poultry, Steel and Paper
- **Municipal** SE investments: Supporting the MEI team in developing a Sustainable Municipalities credit line with IllerBank
- Additional TA through **TCSEP** (€ 530,000 – Spanish Office)



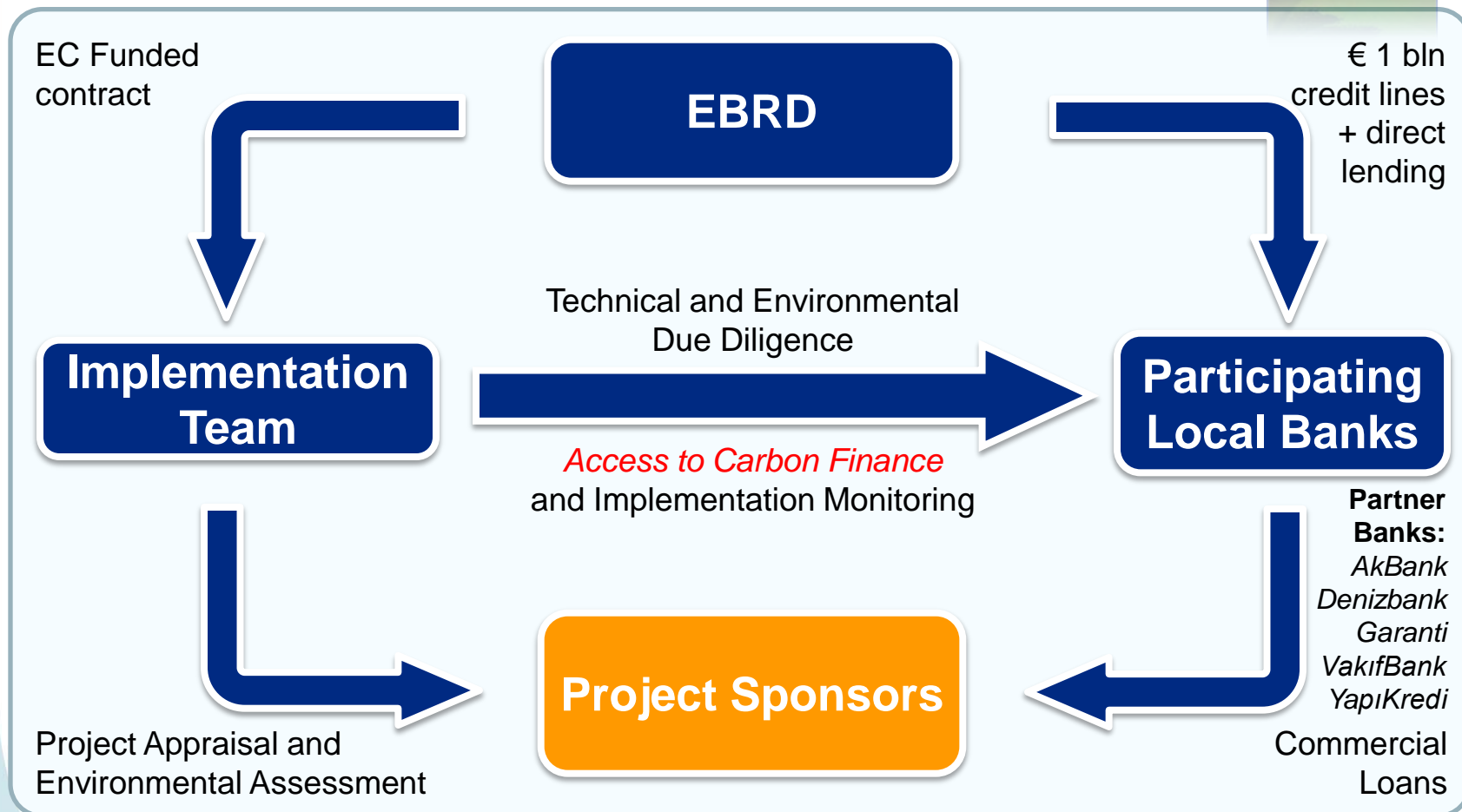
Mid-Size Sustainable Energy Financing Facility (MidSEFF):

Working with our Partner Banks to Scale-up Clean Energy in Turkey

- Objective: To **scale-up Sustainable Energy (RE, EE & WtE) investment in Turkey**, in medium-size projects (up to € 50 mln)
- **€ 1 bln Facility**: € 100 mln EBRD financing to AkBank, DenizBank, Garanti, Vakıfbank, YapıKredi, İşBank (*to be signed*) and one more PB (*t.b.d*) and additional € 300 mln more from EIB
- **EU-funded Technical Assistance** for banks and sponsors, to apply EBRD-EU environmental standards
- Since May-2011: **4 WEPP and 4 HEPP** subprojects disbursed, for total project volume of **EUR 220 mln**, an installed capacity of **190 MW** and an annual abatement of **220,000 tonnes of CO2-eq**



MidSEFF Value Chain: From Disbursement to Projects



Contribution to Carbon Market Development



Carbon Market Development: EBRD's track record in the Region

Focus on regulations, lowering transaction costs and developing carbon project by assisting EBRD's clients.

- Support to Ukraine under the Ukraine Carbon Market Facilitation
- Support to developing emission reduction methodologies, e.g, sustainable urban transport (Warsaw Tram and Metro, Bursa Light Rail Train)
- Develop standardised baselines Carbon Emission Factors for Electricity in Russia and Ukraine

Arranging primary carbon credits demand by managing two carbon funds (€240 million)

- NERCOF and EBRD – EIB managed MCCF, relationships with buyers
- Over 24 CDM and JI transactions in Bulgaria, Estonia, Lithuania, Russia and Ukraine.
- Pricing is typically in range of €7-12/carbon credit

Developing innovative approaches:

- Green Investment Scheme (€40 million) between Poland as seller and Spain and Ireland as buyers to co-finance biogas, biomass, energy efficiency in public buildings and network connections for wind power projects, setting a transaction standard for environmentally robust transactions (example for a Credited NAMA)
- Develop a bundled JI transaction, such as UBB in Bulgaria



MidSEFF Carbon Market Development: Supporting the Development of Carbon Markets in Turkey

- Support further **build up of the market infrastructure**, engaging Banks, develop carbon market products services and use Voluntary Carbon Registry
- Contribute to **growing demand for Turkish carbon credits** by:
 - A pipeline of good quality carbon projects(4 – 8 carbon MidSEFF projects)
 - Analyse Turkish VCM, disseminate results and recommend on (regulated) domestic carbon market and its integration into global carbon markets
 - Explore new domestic and international markets, including developments under PMR, EU ETS and (credited) NAMA / Sector approaches
- Contribute to **lower carbon transactions costs** by:
 - Standardisation of approach (list of standardised and eligible documentation)
 - Publish transaction documentation market standards (ERPA)
 - Determining a standardized carbon emission factor for electricity supply

EBRD focus will be on the value added to sub-projects and Participating Banks





For more information, contact:

Terry McCallion

Director, Energy Efficiency and Climate Change

EBRD London Headquarters, UK

mccallit@ebrd.com

**Energy Efficiency and Climate Change
team in Istanbul:**

Adonai Herrera-Martínez

Principal Manager, Energy Efficiency and Climate Change

EBRD Istanbul Resident Office, Turkey

Tel: +90 212 286 11 10

martinea@ebrd.com



www.ebrd.com